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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,164	10/19/2005	Peter Bostrom	PST2188P1-US	7481

27624 7590 03/09/2007
AKZO NOBEL INC.
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

BLAND, LAYLA D

ART UNIT	PAPER NUMBER
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1609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/544,164	Applicant(s) BOSTROM ET AL.	
	Examiner Layla Bland	Art Unit 1609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/07/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application claims benefit of PCT/SE04/00041, filed January 16, 2004 and Swedish patent application serial No. 0300235-9, filed on January 31, 2003. The preliminary amendment submitted on July 9, 2005 is acknowledged. Claims 1-12 are currently pending and examined on the merits herein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydgren, et al. (US 10/497371, PG Pub 20050000391).

Claims 1 and 2 are drawn to a methyl ethyl hydroxyethyl cellulose ether with a flocculation temperature of 70-85°C, a DS-methyl of 0.1-0.8, a DS-ethyl of 0.1-0.7, and an MS-hydroxyethyl of 1.5-2.8. Claims 3 and 4 further limit claim 1 such that the cellulose ether has a DS-methyl of 0.2-0.6, a DS-ethyl of 0.2-0.6, a MS-hydroxyethyl of 1.7-2.5, and a flocculation temperature of 78-85°C. Claim 9 is drawn to an aqueous formulation containing 0.1-2.5% by weight of the cellulose ether of claim 1. Claim 11 is

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drawn to a rheology modifier for aqueous compositions which comprises the cellulose ether of claim 1.

Rydgren, et al. teach a cellulose ether having a DS methyl of 0.4-2.2, a DS ethyl of 0.05-0.8, and a hydroxy-(C₂-C₃)-alkyl of 0-2 [page 1, lines 25-30], with a flocculation temperature between 60° and 80°C [page 2, lines 1-3]. These ranges overlap with or include the substituted cellulose ethers of the claimed invention. Furthermore, the flocculation temperature is a property of the degree of substitution and is expected to be the same for all methyl ethyl hydroxyethyl celluloses having a particular degree of substitution. Specific polymers are described having a DS ethyl within the claimed range and a flocculation temperature near the claimed range (pages 5-7). Rydgren, et al. also teach an aqueous cement composition wherein the cellulose ether is 0.05-3% of the composition by weight [page 1, lines 25-35]. Rydgren, et al. also teach the cellulose ether used in the aqueous cement composition exhibits good rheology properties [page 1, line 30].

Rydgren, et al. do not specifically teach a polymer having the specific degree of substitution and flocculation temperature of instant claims 1-4.

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce the specific cellulose ethers of instant claims 1-4, 9, and 11. One of ordinary skill in the art would have been motivated to produce these polymers because they are within the claimed ranges of Rydgren et al. One of ordinary skill in the art would have reasonably expected success because producing minor variations within a disclosed prior art range is well within the ordinary and routine level of skill in the art.

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Because the ranges disclosed in this reference overlap with the claimed ranges, one of ordinary skill in the art would have been motivated to synthesize variants of the cellulose ethers disclosed on pages 5-7, having varying degrees of substitution.

Because, as discussed earlier, a structurally identical polymer is expected to have a flocculation temperature identical to the claimed compounds, one of ordinary skill in the art would thus be motivated to, and have a reasonable expectation of success in, producing polymers of the claimed invention. Moreover, it is well established that merely selecting proportions and ranges is not patentable absent a showing of criticality. *In re Becket*, 33 USPQ 33 (CCPA 1937), *In re Russell*, 439 F. 2d 1228, 169 USPQ 426 (CCPA 1971).

Furthermore, because the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. See *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 2144.05 [R-1].

Therefore the invention taken as a whole is *prima facie* obvious.

Claims 6, 7, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydgren, et al. (US 10/497371, PG Pub 20050000391) in view of Berglund, et al. (10/497332, PGPub 20050176951).

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Claims 6 and 7 are drawn to a process for manufacturing the methyl ethyl hydroxyethyl cellulose ether of claim 1. Claims 10 and 12 are drawn to an aqueous formulation of the compound of claim 1 in a waterborne latex paint composition.

The disclosure of Rydgren et al. is discussed above. Rydgren et al. does not disclose a method of making a substituted hydroxyethylcellulose as disclosed in instant claims 6 and 7, or a latex paint comprising these polymers.

Berglund et al. discloses a method of making an alkyl- substituted hydroxyethylcellulose by reacting methyl chloride and alkali-treated cellulose in an alkyl chloride solvent that is preferably ethyl chloride (page 2, lines 10-16). Ethylene oxide and ethyl chloride can be used to introduce ethyl and hydroxylethyl groups into the cellulose ethers (page 3, lines 3-15, page 4, lines 18-22). The cellulose starting material is activated by mercerization with 1-5 moles of alkali per mole of saccharide (page 3, line 29 – page 4, line 5). Specific examples are disclosed on pages 7-10. Berglund et al. also discloses that these water soluble methyl cellulose ethers are useful in water-based paints (page 1, lines 12-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce the polymers of Rydgren et al. by the methods of Berglund et al., and to add the cellulose ethers to a water-based latex paint. One of ordinary skill in the art at the time of the invention would have been motivated to practice the invention in this manner because Berglund et al. discloses a method that can be used to make cellulose ethers having methyl, ethyl, and hydroxylethyl cellulose substituents of various degrees of substitution. One of ordinary skill in the art would have been motivated to

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use these polymers in a latex paint because Berglund et al. discloses that water soluble cellulose ethers are useful additives for water-based paints. One of ordinary skill in the art would reasonably have expected success because the method of Berglund et al. is disclosed to be useful generally for the production of mixed alkyl cellulose ethers.

Merely modifying the process concentrations such as temperature and concentration is not a patentable modification absent a showing of criticality. See In re Aller, 220 F. 2d 454, 105 USPQ 233 (C.C.P.A. 1955).

Thus the invention taken as a whole is *prima facie* obvious.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rydgren, et al. (WO 03/048070 A1, filed November 26, 2002) in view of Berglund, et al. (WO 03/048211 A1, filed November 26, 2002) and further in view of Bartz, et al. (US 5,395,930, March 7, 1995).

Claim 8 is drawn to a process for manufacturing the cellulose ether of claim 1 wherein the alkali, ethylene oxide, and method chloride are added in portions during the reaction.

Rydgren, et al. teach the cellulose ethers of claim 1 but do not teach the claimed method of producing them.

Berglund, et al. teach a method of producing cellulose ethers as discussed above.

Bartz, et al. teach that, during the process for preparing alkyl hydroxyalkyl cellulose ethers, the addition of the alkalizing agent can be added continuously or in

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portions, and it is an advantage to add a certain quantity of further alkalizing agent after the hydroxyalkylation. The quantity of alkalizing agent is that which is required to reach the desired degree of alkylation.

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce the polymers of Rydgren, et al. by the methods of Berglund, et al. and Bartz, et al. One of ordinary skill in the art would be motivated to use the method of Berglund, et al. for reasons discussed above and to modify the method of Berglund to include additional alkalizing agent in order to achieve the desired degree of alkylation with an expectation of success because Bartz, et al. suggest it.

Thus the invention taken as a whole is *prima facie* obvious.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer

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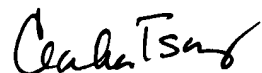
in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Claim 5 is found to be free of the prior art and is allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Layla Bland whose telephone number is (703) 272-9572. The examiner can normally be reached on M-F 7:30AM-5:00PM UST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on (571) 272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


CECILIA TSANG
SUPERVISORY PATENT EXAMINER

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